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Michael N. Milby, Clerk

United States Court of Appeals for the Federal Circuit

99-1485

AMERICAN IMAGING SERVICES, INC.,

Plaintiff-Appellant,

v.

INTERGRAPH CORP.,

Defendant-Appellee.

CA-97-1394

DECIDED: June 12, 2000

Before LOURIE, GAJARSA, and LINN, Circuit Judges.

GAJARSA, Circuit Judge.

DECISION

The Plaintiff-Appellant, American Imaging Services, Inc. ("American Imaging") appeals the decision of the United States District Court for the Southern District of Texas granting the motion of Defendant-Appellee, Intergraph Corp. ("Intergraph"), for summary judgment. See American Imaging Serv., Inc. v. Intergraph Corp., No. H-97-1394 (S.D. Tex. Mar. 17, 1999). The district court declared claims 1 through 11, 13 through 34, and 37 through 41 of American Imaging's U.S. Patent No. 5,353,393 ("393 patent") invalid based upon 35 U.S.C. §102(a) (1994) and claims 12, 35, 36 and 42 of the '393 patent invalid based upon 35 U.S.C. § 103 (1994). For the reasons set forth in

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this opinion, we affirm-in-part, reverse-in-part, vacate-in-part, and remand for further proceedings.

BACKGROUND

American Imaging is the holder of the '393 patent that generally relates to an apparatus and method for manipulating scanned documents using computer-aided design ("CAD") commands. The '393 patent addresses the need for converting a paper document into computer-readable electronic form, permitting changes to that document using computer tools and producing an edited version of that document in both hard copy and electronic form. American Imaging filed suit for patent infringement against Intergraph in the United States District Court for the Southern District of Texas. On May 26, 1998, Intergraph filed a motion for summary judgment asserting that the '393 patent was anticipated and obvious, and therefore, invalid.

The district court conducted a Markman hearing to derive a proper construction of the 42 patent claims. In particular, the court focused on the proper meaning of "CAD system" as used in the '393 patent. After reviewing the patent claims, specification and prosecution history, as well as entertaining testimony and evidence presented by both parties, the district court found that the intrinsic evidence broadly defined CAD systems as packages "commonly used to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display." American Imaging, slip. op. at 27 (quoting the '393 Patent, Col. 1, ll. 18-21).

After adopting this broad definition of CAD, the district court found that SuperPaint, a computer graphics program compatible only with an Apple Macintosh, was a CAD system because it had the ability to create and edit drawings and other

graphic displays on a computer screen. Once the district court determined that SuperPaint was a CAD system, it went on to examine the other features of SuperPaint. Relying on the undisputed testimony of William Snider, the designer of SuperPaint, the district court concluded that SuperPaint enabled its user to: (1) scan an image to create a raster file; (2) call up the raster image on the computer screen; (3) make modifications in the raster image using vector commands; and (4) merge the raster image and the vector changes to that image to produce an edited raster image which can be viewed on the screen, saved electronically and printed out. See id. at 33. Therefore, the district court concluded that SuperPaint anticipated claims 1 through 11, 13 through 34 and 37 through 41 of the '393 patent.

The district court further concluded that dependent claims 12, 35, 36, and 42 were obvious in light of SuperPaint. Although these four claims require an "operating system having an interrupt vector table," a feature foreign to Macintosh but present in conventional DOS operating systems, the district court found that these claims did not embody any additional patentable elements from the independent claims that they depended from and that any reasonably competent software programmer could write an appropriate program addressing the requirements of the different operating system. The district court therefore concluded that these claims were obvious under 35 U.S.C. § 103. This appeal followed. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1) (1994).

DISCUSSION

A. Standard of Review

This court reviews a district court's grant of a motion for summary judgment de novo. See Monarch Knitting Mach. Corp. v. Sulzer Morat GMBH, 139 F.3d 877, 880, 45 USPQ2d 1977, 1980 (Fed. Cir. 1998). Summary judgment is appropriate when there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(c). The moving party bears the burden of establishing the absence of any genuine issue of material fact, and all reasonable inferences must be resolved in favor of the non-movant. See Anderson v. Liberty Lobby, 477 U.S. 242, 255 (1986). A court must "view the evidence presented through the prism of the substantive evidentiary burden" that would operate at trial. Id. at 254. The underlying determination of invalidity must be predicated upon clear and convincing evidence. See National Presto Indus. v. West Bend Co., 76 F.3d 1184, 1189, 37 USPQ2d 1685, 1687 (Fed. Cir. 1996).

B. Claim Construction

The first step in any invalidity analysis is claim construction. See Rockwell Int'l Corp. v. United States, 147 F.3d 1358, 1362, 47 USPQ2d 1027, 1029 (Fed. Cir. 1998). Claim construction is an issue of law, which this court reviews de novo without deference to the trial court. See Markman v. Westview Instruments, Inc., 52 F.3d 967, 979, 34 USPQ2d 1321, 1329 (Fed. Cir. 1995), aff'd, 517 U.S. 370, 38 USPQ2d 1461 (1996). Interpreting the asserted claim begins with a review of the intrinsic evidence—the claims, the specification, and the prosecution history. See id.; see also Vitronics

Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996). If the intrinsic evidence resolves any ambiguity in a disputed claim, extrinsic evidence cannot be used to contradict the established meaning of the claim language. See Mantech Envtl. Servs., Inc. v. Hudson Envtl. Serv., Inc., 152 F.3d 1368, 1373, 47 USPQ2d 1732, 1736 (Fed. Cir. 1998). Extrinsic evidence may, however, be accepted by the court to enhance its understanding of the technology. See EMI Group N. Am., Inc. v. Intel Corp., 157 F.3d 887, 892, 48 USPQ2d 1181, 1184 (Fed. Cir. 1998).

A review of the intrinsic evidence begins with the claims themselves. See Vitronics, 90 F.3d at 1581, 39 USPQ2d at 1576. The claims are to be construed in light of the specification and "both are to be read with a view to ascertaining the invention." Bell Communication Research v. Vitalink Communications Corp., 55 F.3d 615, 620, 34 USPQ2d 1816, 1819 (Fed. Cir. 1995); see also Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1577 (stating that the specification is reviewed to determine whether the patentee used terms inconsistent with their ordinary meaning). Finally, the court should consider the prosecution history for any express representations regarding the scope and meaning of the claims. See Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1577.

The claim terms are generally given their ordinary and customary meaning. See id. Accordingly, a technical term used in a patent is interpreted as having the meaning a person "experienced in the field of the invention" would understand it to mean. Hoechst Celanese Corp. v. BP Chem. Ltd., 78 F.3d 1575, 1578, 38 USPQ2d 1126, 1129 (Fed. Cir. 1996). See also Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989, 50 USPQ2d 1607, 1610 (Fed. Cir. 1999) (noting the "heavy presumption" that courts "give full effect to the ordinary and accustomed meaning of

claim terms."). Of course, a patentee is free to act as his or her own lexicographer and may define a claim term differently from its ordinary meaning. See id. However, if the patentee chooses to act as his or her own lexicographer, this special definition must be "clearly stated within the patent specification or file history." Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1576.

There is no indication in the written description or in the prosecution history that the patentee intended "CAD system" and "CAD commands" to be defined differently from their ordinary or customary meanings. Therefore, this court's task is to determine the ordinary meaning of "CAD system" and "CAD command" to one experienced in the field of the invention. See Hoechst Celanese Corp., 78 F.3d at 1578, 38 USPQ2d at 1129.

In the written description, the patentee describes a CAD system as a package "commonly used to create and edit drawings and other graphic displays on a computer screen or other cathode ray tube (CRT) display." '393 Patent, Col. 1, ll. 17-21. The district court relied heavily on this sentence as the proper understanding of CAD system to one of skill in the art. However, in the very next sentence of the written description, the patentee further describes CAD systems as "particularly well-suited for producing engineering design drawings." '393 Patent, Col. 1, ll. 21-22. The district court disregarded how this sentence further refines and narrows the broad description found in the previous sentence. As a result, the district court adopted an unduly broad definition of "CAD system."

The proper understanding of "CAD system" is ascertained by reading these two sentences in conjunction. For something to be a CAD system as understood by one of

skill in the art, and as used in this patent, the system must not only be used to create and edit drawings on a computer screen, but must also be well-suited for producing engineering drawings. Thus, a "CAD system" is a species of graphics programs particularly well-suited for producing engineering drawings. "CAD commands," consequently, are those commands that enable a user to produce engineering drawings in a CAD environment.

The remainder of the written description supports this interpretation of "CAD system" and "CAD commands." For example, a user of a CAD system "can construct detailed design drawings and edit the drawings as necessary directly on screen." '393 Patent, Col. 4, ll. 38-40 (emphasis added). Similarly, "CAD commands are used to produce a design drawing or the like on a computer screen display." '393 Patent, Col. 4, ll. 15-17. Also, by using the technical term "CAD system" throughout the written description, the patentee is, of course, referring to the system described earlier in the patent—a system well-suited for producing engineering drawings. See col. 1, ll. 18-22. The fact that the specification does not repeatedly refer to engineering drawings or use particularly elaborate examples to illustrate the functionality of the invention does not suggest that the inventor intended to give "CAD system" a meaning broader than the ordinary and customary meaning of the term. See Vitronics, 90 F.3d at 1582, 39 USPQ2d at 1577 (stating that a patentee must clearly indicate that a claim term is used in a manner other than its ordinary meaning). Such statements further defining or describing "CAD system" are unnecessary given the explicit description of the term elsewhere in the patent and would have been redundant. Finally, merely because a CAD system is capable of producing simple drawings such as circles, lines, and the

example found in Figure 4 of the '393 patent does not suggest that any graphics editor that can create such simple drawings is a "CAD system." This logical fallacy urged upon us by appellee must be rejected.

The doctrine of claim differentiation also supports this interpretation of "CAD system" and "CAD commands." Under this doctrine, two patent claims are presumptively of a different scope. See Krafts Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1366, 53 USPQ2d 1814, 1823 (Fed. Cir. 2000). This presumption is heightened if the absence of such a difference in meaning and scope would make a term in a claim superfluous. See Tandon Corp. v. United States Int'l Trade Comm'n, 831 F.2d 1017, 1023, 4 USPQ2d 1283, 1288 (Fed. Cir. 1987). For example, claim 8, depending from claim 1, restricts the "second means for electronically displaying in response to user input commands" of claim 1 to a CAD system. '393 Patent, Col. 10, II. 60-62. Claim 8 also limits "merging means for merging said first and second images" of claim 1 to "editing means responsive to CAD user input commands of said second image for modifying said first image." '393 Patent, Col. 10, II. 60-62. To broadly define CAD system as simply a generic graphics editor, as the district court did, would render claim 8, as well as claims 9 through 13, which also incorporate the CAD limitation, superfluous in light of claims 1 through 7. Thus, the doctrine of claim differentiation supports the conclusion that "CAD system" refers to graphic editors particularly well-suited for engineering design drawings, and "CAD commands" are those commands used by such a system.

D. Anticipation

A patent claim is anticipated if a single prior art reference contains each and every limitation of the claimed invention. See Rockwell Int'l Corp., 147 F.3d at 1363, 47 USPQ2d at 1031 (Fed. Cir. 1985); see also 35 U.S.C. § 102(a). Anticipation is a question of fact. See In re Graves, 69 F.3d 1147, 1151, 36 USPQ2d 1225, 1233 (Fed. Cir. 1998). The district court concluded that SuperPaint anticipated claims 1 through 11, 13 through 34, and 37 through 41 of the '393 patent. American Imaging's only contention opposing anticipation of these claims is that SuperPaint is not a CAD system, and therefore, cannot produce detailed engineering drawings. However, claims 1 through 7 and 14 through 29 are not limited to use in a CAD environment. Rather, these claims are broad enough to encompass a general graphics program such as SuperPaint. Therefore, we conclude that the district court did not err in determining that there was no genuine issue of material fact and SuperPaint anticipates claims 1 through 7 and claims 14 through 29 of the '393 patent as a matter of law.

Claim 8, however, limits the electronic display means found in claim 1 to a CAD system. See '393 Patent, Col. 10, ll. 60-65. Similarly, claims 9 through 11 contain these limitations through their dependency on claim 8. See '393 Patent, Col. 11, ll. 1-21; '393 Patent, Col. 15-16, ll. 9-45. In addition, claim 13 further limits "the manipulating means" in claim 1 to those responsive to CAD commands. A CAD system using CAD commands, as understood by one skilled in the art, is a graphics program that enables a user to produce engineering drawings. SuperPaint does not contain this limitation as found in these claims. SuperPaint does not enable its user to utilize commands to edit or to manipulate engineering drawings because SuperPaint is

incapable of producing such documents. Thus, the district court erred in determining that SuperPaint anticipates claims 8 through 11, and 13.

Furthermore, the preambles of claim 30 and claim 37 contain the limitation of a CAD system, which uses CAD commands to produce and display design drawings.¹ This limitation is incorporated into claims 31 through 34, which depend from claim 30, and claims 38 through 41, which depend from claim 37. See '393 Patent, Col. 15, II. 9-40; '393 Patent, Col. 16, II. 17-35. Although the preamble generally does not limit the scope of a claim, see *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994), in cases where the claim drafter purported to use both the preamble and the body of the claim to define the subject matter of the invention, the preamble is considered necessary to give life, meaning and vitality to the claims. See *Bell Communications*, 55 F.3d at 620-21, 34 USPQ2d at 1820; see also *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 480-81 (CCPA 1951). Here, the specification clearly indicates that the patentee had invented an apparatus and method for manipulating and editing scanned design drawings in a CAD environment. We conclude the preambles of claims 30 and 37 do not merely state a purpose or intended use of the claimed apparatus; rather the preambles breathe life and meaning into the claims and further limits the claimed invention. Accordingly, because SuperPaint is not a CAD system, the

¹ The preambles for claims 30 and 37, respectively, read as follows:

30. Apparatus for manipulating a scanned document in a computer aided design system which uses computer aided design user input commands for producing a design drawing on a computer screen display

37. In a computer aided design (CAD) system utilizing computer aided design user input commands to produce and modify a vector-based image

district court erred in determining that it anticipates claims 30 through 34 and claims 37 through 41.

E. Obviousness

A claimed invention is unpatentable if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103. Whether an invention is obvious is a legal conclusion based upon underlying factual inquiries. See Graham v. John Deere Co., 383 U.S. 1, 17-18, 48 USPQ2d 459, 467 (1966). The factual inquiries include: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective indicia of non-obviousness. See id.

Whether the teachings of the prior art suggest or motivate one of ordinary skill in the art to combine known references is a critical element in the obviousness inquiry. See, e.g., Carella v. Starlight Archery & Pro Line Co., 804 F.2d 135, 140, 231 USPQ 644, 647 (Fed. Cir. 1986) (holding that obviousness cannot be established by combining the teachings of the prior art without a suggestion to combine the references). This evidence may be derived from the prior art teachings, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). This showing must be unequivocal, and cannot rest on broad conclusory statements about what the prior art suggests to one of ordinary skill in the art. See In re Dembiczak, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616 (Fed. Cir.

1999). Otherwise, the obviousness determination is vulnerable to the improper use of hindsight.

Although SuperPaint does not anticipate claims 8 through 11, 13, 30 through 34 and 37 through 41 because it is a paint program rather than a CAD system, the question remains as to whether one of ordinary skill in the art would find it obvious to use the teachings of SuperPaint and apply them to a CAD system using CAD commands as found in these claims. There is no requirement that the prior art contain an expressed suggestion or motivation to combine known elements to achieve the claimed invention. See Motorola, 121 F.3d at 1472, 43 USPQ2d at 1489. As stated above, the suggestion or motivation to combine may be derived either from the knowledge of one skilled in the art or may come from the nature of the problem to be solved. See Pro-Mold & Tool Co., 75 F.3d at 1572, 37 USPQ2d at 1630.

The '393 patent sought to solve the problem of manipulating scanned documents using CAD commands and facilitating the editing of a document and its reproduction in hard copy form. See '393 Patent, Col. 2, ll. 1-17. Although SuperPaint does not operate to produce engineering drawings, it teaches the art of scanning an image to create a raster file, modifying the raster image using vector commands and merging and editing the raster image and the vector changes in a paint program that can be reproduced into hard copy form. More pointedly, SuperPaint teaches, in a general graphics program, to one of ordinary skill in the art of computer programming, the solution sought by the '393 patent. It would have been well within the knowledge of one of ordinary skill in the art to apply these teachings within a CAD system, which itself is a species of graphic programs. Therefore, we conclude that claims 8 through 11, 13, 30

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through 34 and 37 through 41 would have been obvious as a matter of law in light of SuperPaint and the knowledge generally available to one of ordinary skill in the art attempting to solve the problem these claims sought to address.

The district court determined that claims 12, 35, 36, and 42 were invalid for obviousness. In doing so, the court rejected American Imaging's argument that these claims add a further limitation to the '393 patent by describing a system for manipulating interrupt vector tables and ultimately determined that interrupt vector tables are merely an adaptation for operating within a conventional DOS system and were well-known within the art. Following this premise, the district court announced in conclusory terms that it would have been obvious to one of ordinary skill in the art to adapt SuperPaint with different data-bases, capabilities and applications to operate on a conventional DOS operating system. However, absent a teaching, suggestion or motivation that one of ordinary skill in the art would reconfigure SuperPaint for use in an operating system having an interrupt vector table, this conclusion of obviousness is erroneous.

Furthermore, the record lacks any other evidence regarding whether SuperPaint, which admittedly does not include the ability to operate with an interrupt vector table, suggests to one of ordinary skill in the art to reconfigure SuperPaint to enable it to work with an operating system having an interrupt vector table. Although an expressed suggestion to configure SuperPaint to work with such an operating system is not required, there must be some suggestion found in the field of knowledge generally available to one of ordinary skill in the art or motivation to combine from the problem itself. See In re Nilsson, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1501 (Fed. Cir. 1988); see also Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1472, 43 USPQ2d

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1481, 1489 (Fed. Cir. 1997). Mr. Snider's declaration, quoted by the district court in support of its obviousness determination is merely a conclusory statement that one could write a program to address these matters. His declaration, especially because he was not versed in DOS operating systems, is insufficient to support a conclusion of obviousness.

Moreover, SuperPaint only teaches the art of converting a document into computer-readable form wherein the user can modify the document and reproduce it in a hard-copy form. SuperPaint does not teach one of ordinary skill in the art the ability to reconfigure the SuperPaint program to operate within a conventional DOS operating system and the problem these claims sought to resolve would not motivate an ordinarily skilled artisan to reconfigure a Macintosh-compatible paint program to manipulate an interrupt vector table. Because there are genuine issues of material fact that must be resolved in order to determine whether claims 12, 35, 36 and 42 would have been obvious, summary judgment on these claims was incorrect.

F. Expert Testimony

Finally, American Imaging asserts that the district court improperly considered extrinsic evidence regarding the definition of "CAD system" during the Markman hearing. In particular, American Imaging objects to the use of certain statements made by Mr. Snider. However, the district court expressly stated in its decision, as well as during the Markman hearing, that it used Snider's testimony regarding the definition of "CAD system" only to educate itself on the technology. The district court has the discretion to consider factual or appropriate extrinsic evidence, such as expert testimony, for purposes of a tutorial or for background information in the technical area

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at issue. See EMI Group, 157 F.3d at 892, 48 USPQ2d at 1184. Therefore, there was no error in the use of Snider's testimony.

American Imaging also challenges Snider's qualification as an expert regarding interrupt vector tables. Specifically, American Imaging states that this area is beyond Snider's field of expertise. The admissibility of expert testimony is a matter left to the discretion of the trial court and will not be disturbed on appeal unless it is manifestly erroneous. See Kumho Tire Co. v. Carmichael, 526 U.S. 137, 152 (1999) (holding that a district court's decision to admit or exclude expert testimony is reviewed for abuse of discretion). The district court did not commit manifest error by considering the declaration of Snider, a certified computer-software programmer with many years of experience. Thus, the district court did not abuse its discretion in admitting this declaration.

CONCLUSION

We conclude that a CAD system, as understood by one experienced in the field, refers to a species of graphic editors particularly well-suited for producing engineering drawings, and CAD commands are those commands that enable a user to produce engineering drawings. Because claims 1 through 7 and claims 14 through 29 are not limited to CAD systems, we affirm the district court's conclusion of anticipation with regard to these claims. However, the district court erred in concluding claims 8 through 11, claims 30 through 34, and claims 37 through 41 are anticipated by SuperPaint. On the other hand, these claims would have been obvious as a matter of law in light of SuperPaint. In addition, we vacate the district court's conclusion of obviousness with regard to claims 12, 35, 36 and 42 of the '393 patent because there are genuine issues

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of material fact regarding the underlying factual bases of the obviousness determination. Finally, we affirm the district court's rulings regarding expert testimony. Therefore, we remand to the district court for a resolution consistent with this opinion.

A True Copy.

Attest: 7-14-00

A. M. Somelinson

Deputy Clerk